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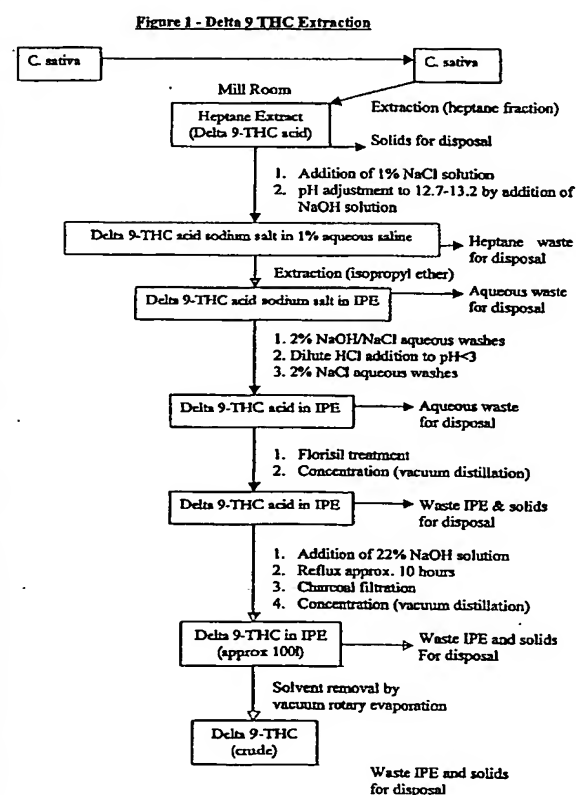
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[Continued on next page]

(54) Title: PRODUCTION OF Δ^9 TETRAHYDROCANNABINOL(57) Abstract: Δ^9 THC acid is obtained from plant material and extracted into an aqueous solvent under conditions of pH control. the acid is converted to a salt and the salt extracted into a polar solvent, yielding acid of high purity. The Δ^9 THC acid is then converted to Δ^9 THC which is further purified and combined with a carrier for pharmaceutical use.

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INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/GB 03/00441

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07D311/80 A61K31/35

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	VERWEY ET AL.: "A rapid method of preparation of delta1-THC by isolation of delta1-THC acid from hashish" PHARM. WEEKBLAD, vol. 107, 1972, pages 415-416, XP001121360 cited in the application page 415, paragraph 3 ---	1-27
A	WO 00 25127 A (UNIV MISSISSIPPI) 4 May 2000 (2000-05-04) the whole document	1-27
X	cf. esp. ex. 11 examples 1-11	28-37
X	examples 2,3,5-8,11 ---	38-42
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

4 August 2003

Date of mailing of the international search report

18. 08. 2003

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/00441

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MECHOULAM ET AL.: "Recent Advances in the Chemistry of Hashish" FORTSCHR. CHEM. ORG. NAT. STOFFE, vol. 25, 1967, pages 175-213, XP009008313 the whole document	1-27
X	HUFFMAN ET AL.: "Regioselective Synthesis of (+)-11-Nor-9-carboxy-delta9-THC" J. ORG. CHEM., vol. 54, 1989, pages 4741-4743, XP002250006 Cpd. 1; p. 4743, right column	43-50
X	HUFFMAN ET AL.: "Synthesis of (+)-11-Nor-9-carboxy-delta9-tetrahydrocannabinol: New Synthetic Approaches to Cannabinoids" J. ORG. CHEM., vol. 56, 1991, pages 1481-1489, XP002250007 Cpds. 1, 41	43-50
X	KACHENSKY ET AL.: "Preparation of Racemic, (-)- and (+)-11-Nor-delta9-Tetrahydrocannabinol-9-carboxylic Acid" J. ORG. CHEM., vol. 62, 1997, pages 7065-7068, XP002250008 Cpd. 2c	43-50

INTERNATIONAL SEARCH REPORT

national application No.
PCT/GB 03/00441

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-27

Method for the production of delta 9 THC

2. Claims: 28-37

Method for the purification of delta 9 THC

3. Claims: 38-50

Purified delta 9 THC, compositions thereof, delta 9 THC carboxylic acid salt, compositions thereof and delta 9 THC carboxylic acid

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/00441

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0025127	A	04-05-2000	US 6365416 B1 02-04-2002
			AU 1234800 A 15-05-2000
			CA 2348028 A1 04-05-2000
			EP 1133688 A1 19-09-2001
			JP 2002528718 T 03-09-2002
			US 2002086438 A1 04-07-2002
			WO 0025127 A1 04-05-2000
			US 2002039795 A1 04-04-2002

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